



## TECHNICAL DATA

### MICROFAST® QUICK RESPONSE UPRIGHT SPRINKLER VK350 (K8.0)

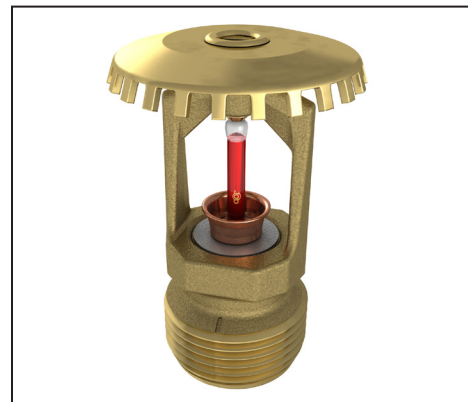
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

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### 1. DESCRIPTION

The Viking Microfast® Quick Response Upright Sprinkler VK350 is a small, thermo-sensitive, glass-bulb spray sprinkler available in several different finishes, temperature ratings, and K-Factors to meet design requirements. The special Polyester, and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are listed/approved as indicated in the Approval Charts.



### 2. LISTINGS AND APPROVALS

**UL** vs **cULus Listed:** Category VNIV



**FM Approved:** Class Series 2000



**VdS Approved:** Certificates G414017, G414018, G4980020, and G4060054



**LPCB Approved:** Certificate 096e/03



**CE Certified:** Standard EN 12259-1, EC-certificate of constancy of performance 0832-CPR-S0021 and EC-certificate of conformity 0786-CPD-40278



**CCC Approved:** Approved by the China Certification Center for Fire Products (CCC)



**MED Certified:** Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003

**NOTE:** Other International approval certificates are available upon request.

Refer to Approval Chart 1 and Design Criteria cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria FM Approval requirements that must be followed.

### 3. TECHNICAL DATA

#### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)\*  
 Maximum Working Pressure: 175 psi (12 bar) wwp.  
 Factory tested hydrostatically to 500 psi (34.5 bar)  
 Testing: U.S.A. Patent No. 4,831,870  
 Thread size: 1/2" NPT, 15 mm BSP, 3/4" NPT, 20 mm BSP  
 Nominal K-Factor: 8.0 U.S. (115.2 metric\*\*)  
 Glass-bulb fluid temperature rated to -65 °F (-55 °C)  
 Overall Length: 2-5/16" (59 mm)

\*cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

#### Material Standards:

Frame Casting: Brass UNS-C84400  
 Deflector: Copper UNS-C19500  
 Bulb: Glass, nominal 3 mm diameter  
 Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape  
 Screw: Brass UNS-C36000  
 Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400  
 For Polyester Coated Sprinklers: Belleville Spring-Exposed  
 For ENT Coated Sprinklers: Belleville Spring-Exposed, Screw and Pipcap - ENT plated.

#### Ordering Information: (Also refer to the current Viking price list.)

Order Viking Microfast® Quick Response Upright Sprinkler VK350 by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-W, Black Polyester = M-B, and ENT = JN  
 Temperature Suffix (°F/°C): 135°/57° = A, 155°/68° = B, 175°/79° = D, 200°/93° = E, and 286°/141° = G

For example, sprinkler VK350 with a 1/2" thread, Brass finish and a 155 °F/68 °C temperature rating = Part No. 18259AB



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**Available Finishes And Temperature Ratings:** Refer to Table 1.

**Accessories:** (Also refer to the Viking website.)

**Sprinkler Wrench:** Standard Wrench: Part No. 21475MB (available since 2017)

**Sprinkler Cabinets:**

A. Six-head capacity: Part No. 01724A (available since 1971)

B. Twelve-head capacity: Part No. 01725A (available since 1971)

#### 4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

#### 5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

#### 6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

#### 7. AVAILABILITY

The Viking Microfast® Quick Response Upright Sprinkler VK350 is available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

#### 8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome, White Polyester, Black Polyester, and ENT

**Corrosion-Resistant Coatings<sup>3</sup>:** White Polyester, Black Polyester and ENT. ENT in all temperature ratings except 135 °F (57 °C)

#### Footnotes

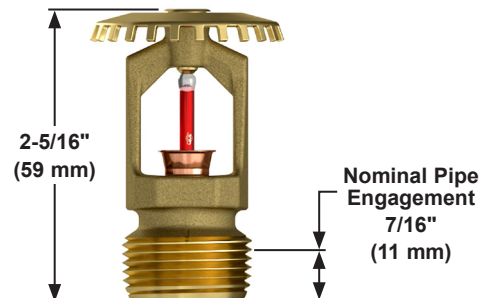
<sup>1</sup> The sprinkler temperature rating is stamped on the deflector.

<sup>2</sup> Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

<sup>3</sup> The corrosion-resistant coatings have passed the standard corrosion test required by the approving agencies indicated on pages 51c-e. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester, ENT, and PTFE coatings. For ENT coated automatic sprinklers, the waterway is coated.



**Figure 1: Sprinkler Wrench**



**Figure 2: Sprinkler Dimensions**



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### Approval Chart 1 (UL)

Microfast® Quick Response  
 Upright Sprinkler VK350  
 Maximum 175 PSI (12 bar) WWP

KEY	
Temperature	Finish
A1X ←	Escutcheon (if applicable)

Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria.)					
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	VdS	LPCB	CE	10	CCC
18257	VK350	3/4"	--	8.0	115.2	2-5/16	59	A1, B2	A1	A1	B1 <sup>7</sup>	B1	
18278	VK350	--	20 mm	8.0	115.2	2-5/16	59	A1, B2	A1	A1	B1 <sup>7</sup>	B1	
18259 <sup>9</sup>	VK350	1/2"	15 mm	8.0	115.2	2-5/16	59	A1, B2	A1	--	B1 <sup>8</sup>	--	
20382	VK350	3/4"	--	8.0	115.2	2-5/16	59	--	--	--	--	--	C3
20237	VK350	--	20 mm	8.0	115.2	2-5/16	59	--	--	--	--	--	C3
<b>NOTICE - Product Below - Limited Availability (Contact Local Viking Office)</b>													
06665B	VK350	3/4"	--	8.0	115.2	2-5/16	59	A1, B2	A1	A1	B1 <sup>7</sup>	B1	--
14817	VK350	--	20 mm	8.0	115.2	2-5/16	59	A1, B2	A1	A1	B1 <sup>7</sup>	B1	--
06764B <sup>9</sup>	VK350	1/2"	15 mm	8.0	115.2	2-5/16	59	A1, B2	A1	--	A1 <sup>8</sup>	--	--

#### Approved Temperature Ratings

A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141°C)  
 B - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141°C)  
 C - 155 °F (68 °C)

#### Approved Finishes

1 - Brass, Chrome, White Polyester<sup>5,6</sup>, and Black Polyester<sup>5,6</sup>  
 2 - ENT<sup>5</sup>  
 3 - Chrome

#### Footnotes

- <sup>1</sup> Base part number is shown. For complete part number, refer to Viking's current price schedule.
- <sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
- <sup>3</sup> This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.
- <sup>4</sup> Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
- <sup>5</sup> cULus Listed as corrosion resistant.
- <sup>6</sup> Other colors are available on request with the same Listings and Approvals as the standard colors.
- <sup>7</sup> CE Certified, Standard EN 12259-1, EC-certificate of constancy of performance 0832-CPR-S0021 and EC-certificate of conformity 0786-CPD-40278.
- <sup>9</sup> The 1/2" NPT Large Orifice Sprinkler is listed and approved for retrofit only when installed in accordance with NFPA 13.
- <sup>10</sup> MED Certified, Standard EN 12259-1, EC-certificate 0832-MED-1003.

### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1)

#### cULus Listing Requirements:

The Microfast® Quick Response Upright Sprinkler VK350 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

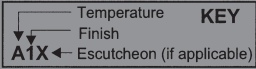
- Designed for use in Light and Ordinary Hazard occupancies.
- The sprinkler installation rules contained in NFPA 13 for standard spray upright sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to Bulletin Form No. F\_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**

	<b>TECHNICAL DATA</b>	<b>MICROFAST® QUICK RESPONSE UPRIGHT SPRINKLER VK350 (K8.0)</b>
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<b>Approval Chart 2 (FM)</b> Microfast® Quick Response Upright Sprinkler VK350 Maximum 175 PSI (12 bar) WWP								
Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals <sup>3</sup> (Refer also to Design Criteria below.)
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	
18257	VK350	3/4"	--	8.0	115.2	2-5/16	59	A1, B2
18278	VK350	--	20 mm	8.0	115.2	2-5/16	59	A1, B2
18259 <sup>5</sup>	VK350	1/2"	15 mm	8.0	115.2	2-5/16	59	A1, B2
<b>NOTICE - Product Below - Limited Availability (Contact Local Viking Office)</b>								
06665B	VK350	3/4"	--	8.0	115.2	2-5/16	59	A1, B2
14817	VK350	--	20 mm	8.0	115.2	2-5/16	59	A1, B2
06764B <sup>5</sup>	VK350	1/2"	15 mm	8.0	115.2	2-5/16	59	A1, B2
<b>Approved Temperature Ratings</b> A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141°C) B - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141°C)							<b>Approved Finishes</b> 1 - Brass, Chrome, White Polyester <sup>4</sup> , and Black Polyester <sup>4</sup> 2 - ENT <sup>6</sup>	
<b>Footnotes</b> <sup>1</sup> Base part number is shown. For complete part number, refer to Viking's current price schedule. <sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0. <sup>3</sup> This table shows the FM Approvals available at the time of printing. Check with the manufacturer for any additional approvals. <sup>4</sup> Other colors are available on request with the same Approvals as the standard colors. <sup>5</sup> The 1/2" NPT Large Orifice Sprinkler is listed and approved for retrofit only when installed in accordance with NFPA 13. <sup>6</sup> FM approved as corrosion proofing for corrosive environments.								



<b>DESIGN CRITERIA - FM</b> (Also refer to Approval Chart 2 above.)
<p><b>FM Approval Requirements:</b></p> <p>The Microfast® Quick Response Upright Sprinkler VK350 is FM Approved as a quick response <b>Non-Storage</b> upright sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.</p> <p><b>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.</b></p>
<p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Bulletin Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</b></p>